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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/675,980	09/29/2000	Arthur Zavalkovsky	50325-0106	1727

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EXAMINER
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BATES, KEVIN T

ART UNIT	PAPER NUMBER
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2155

DATE MAILED: 04/01/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

09/675,980

Applicant(s)

ZAVALKOVSKY ET AL.

Examiner

Kevin Bates

Art Unit

2155

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 07 January 2005.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-65 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-65 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |                                                                                                                        |                                                                                         |
|------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)                                            | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____                                                |

## DETAILED ACTION

This Office Action is in response to a communication made on January 7, 2005.

Claims 1-65 are pending in this application.

### ***Response to Amendment***

#### ***Double Patenting***

The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. See *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and, *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent is shown to be commonly owned with this application. See 37 CFR 1.130(b).

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

Claims 1, 5, 9, 13, 14, 24, 41, and 58 are rejected under the judicially created doctrine of double patenting over claim 1 of U. S. Patent No. 6822940 since the claims, if allowed, would improperly extend the "right to exclude" already granted in the patent.

The subject matter claimed in the instant application is fully disclosed in the patent and is covered by the patent since the patent and the application are claiming common subject matter, as follows: dynamically adapting the QoS treatment of data flows by reassigning/marking the packets with new treatment values based on actual network events.

Furthermore, there is no apparent reason why applicant was prevented from presenting claims corresponding to those of the instant application during prosecution of the application which matured into a patent. See *In re Schneller*, 397 F.2d 350, 158 USPQ 210 (CCPA 1968). See also MPEP § 804.

***Claim Rejections - 35 USC § 102***

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

**Claims 1, 3, 5, 7, 9, 11, 13-17, 19-20, 24-25, 27-28, 31-34, 36-37, 41-42, 44-45, 48-51, 53-54, 58-59, 61-62, and 65 are rejected under 35 U.S.C. 102(e) as being anticipated by Pandya (6671724).**

Regarding claims 1, 5, 9, 13, 14, 24, 41, and 58, Pandya discloses a method for dynamically adapting packets of data in a packet-switched network based on bandwidth information within the network (Column 7, lines 28 – 39; Column 8, lines 27 – 30; Column 9, lines 39 – 49), comprising the computer-implemented steps of: marking a first group of one or more packets of a data flow with a first behavioral treatment value (Column 2, lines 33 – 36), wherein the first behavioral treatment value directs devices within the network to treat the first group of one or more packets with a first quality of service treatment (Column 11, lines 41 – 45; Column 11, lines 55 – 65); determining an

achieved flow bandwidth for the data flow based on data traffic within the network (Column 12, lines 15 – 29; Column 10, lines 1 – 11; Column 15, lines 23 – 28); determining a second behavioral treatment value based on the achieved flow bandwidth for the data flow within the network; and marking a second group of one or more packets of said data flow with said second behavioral treatment value, wherein the second behavioral treatment value directs devices within the network to treat the second group of one or more packets with a second quality of service treatment (Column 14, lines 54 – 64; Column 15, lines 1 – 10; Column 16, lines 7 – 19).

Regarding claims 25, 42, and 59, Pandya discloses a method for performing packet marking comprising the computer implemented steps of defining an initial set of Quality of Service (QoS) values for coloring packets within a plurality of data flows (Column 2, lines 33 – 36), wherein each of the QoS values indicates an allocation of bandwidth (Column 2, lines 33 – 36); coloring a first group of one or more packets of a given data flow selected from the plurality of data flows (Column 2, lines 33 – 36), without regard to an achieved flow bandwidth, by at least communicating the initial set of QoS values to each of one or more edge differentiated services domain nodes that are located at one or more edges of a differentiated services domain, and the one or more edge differentiated services domain nodes using one or more of the initial set of QoS values to color the first group (Column 11, lines 41 – 45; Column 11, lines 55 – 65; Column 13, lines 35 – 41); estimating traffic bandwidth within the network based on bandwidth information corresponding to a current traffic pattern of the network, wherein the traffic bandwidth estimated includes an achieved flow bandwidth for the given data

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flow (Column 12, lines 15 – 29; Column 10, lines 1 – 11; Column 15, lines 23 – 28); determining an updated set of QoS values for coloring packets within the plurality of data flows, based on the traffic bandwidth estimated (Column 14, lines 54 – 64; Column 15, lines 1 – 10; Column 16, lines 7 – 19), wherein the updated set of QoS values provide lower levels of service than other available choices of QoS values, and wherein the updated set of QoS values provide a high enough level of service to accommodate the traffic bandwidth estimated (Column 21, lines 17 – 28); coloring a subsequent group of one or more packets of the given data flow with the one or more of updated set of QoS values by at least communicating the updated set of QoS values to each of one or more edge differentiated services domain nodes, and the one or more edge differentiated services domain nodes using one or more of the updated set of QoS values to color the subsequent group (Column 14, lines 54 – 64; Column 15, lines 1 – 10; Column 16, lines 7 – 19); repeating the steps of estimating traffic bandwidth, determining an updated set of QoS values, and coloring a subsequent group multiple time, therein tuning the network on an ongoing basis (Column 14, lines 59 – 64).

Regarding claims 3, 7, and 11, Pandya discloses the steps of determining packet flow characteristics of the first group of one or more packets of a data flow (Column 12, lines 15 – 29); and determining the second behavioral treatment value based on the available bandwidth within the network and the packet flow characteristics of the first group of one or more packets of a data flow (Column 14, lines 54 – 64; Column 15, lines 1 – 10; Column 16, lines 7 – 19).

Regarding claims 4, 8, and 12, Pandya discloses the steps of establishing a Quality of Service (QoS) policy for applying a per-hop-behavior treatment for forwarding packets within a flow in said network; and generating the first behavioral treatment value based on the established QoS policy (Column 2, lines 26 – 40; Column 7, lines 40 – 58; Column 9, lines 32 – 35; Column 11, lines 36 – 46, where the agents are located at the nodes and apply the QoS policy).

Regarding claims 15, 32, and 49, Pandya discloses that the first behavioral treatment is determined without regard to the achieved flow bandwidth (Column 11, lines 41 – 45; Column 11, lines 55 – 65; Column 13, lines 35 – 41).

Regarding claims 16, 33, and 50, Pandya discloses that the second behavioral treatment is a behavioral treatment that provides a lower level of service than other available choices of behavioral treatments; and wherein the second behavioral treatment provides a high enough level of service to accommodate the achieved flow bandwidth (Column 14, lines 59 – 64).

Regarding claims 17, 34, and 51, Pandya discloses the second behavioral treatment is a behavioral treatment that provides a minimum level of service that is a sufficient level of service to accommodate the achieved flow bandwidth (Column 14, lines 59 – 64).

Regarding claim 19, 36, and 53, Pandya discloses repeating the step of determining the achieved flow bandwidth and steps that follow the step of determining the achieved flow bandwidth (Column 14, lines 59 – 64).

Regarding claim 20, 37, and 54, Pandya discloses repeating the step of determining the achieved flow bandwidth and steps that follow the step of determining the achieved flow bandwidth multiple times, therein enhancing efficiency of the network on an on going basis (Column 14, lines 59 – 64).

Regarding claims 27, 28, 44, 45, 61, and 62, Pandya discloses that the data flow is associated with only one behavioral treatment at any given time (Column 11, lines 35 – 46).

Regarding claims 31, 48, and 65, Pandya discloses that determining the second behavioral treatment is in response to a determination of achieved flow bandwidth resulting from the determining of the achieved flow bandwidth (Column 14, lines 54 – 64; Column 15, lines 1 – 10; Column 16, lines 7 – 19).

***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

**Claims 2, 6, 10, 18, 26, 35, 43, 52, and 60 are rejected under 35 U.S.C. 103(a) as being unpatentable over Pandya in view of Koskelainen (6570851).**

Regarding claims 2, 6, and 10, Pandya discloses the step of marking a first group of one or more packets includes the step of storing indicator of QoS in each header of the first group of one or more packets of a data flow (Column 2, lines 33 – 36); the step of determining a second behavioral treatment value includes the step of determining a



second QoS; and the step of marking a second group of one or more packets includes the step of marking the new QoS indicator in each header of the second group of one or more packets of a data flow (Column 14, lines 54 – 64; Column 15, lines 1 – 10; Column 16, lines 7 – 19), but the combination does not explicitly indicate that those priorities are marked in the packets using differentiated services codepoint (DSCP) values.

Koskelainen discloses using DSCP values to control QoS agreements in a network (Column 4, lines 20 – 30). It would have been obvious to one of ordinary skill in the art at the time the invention was made to use Koskelainen's teaching of DSCP values to indicate to the network the QoS of the packets in Pandya's system in order to give the nodes a better indication about what type of packet they are dealing with and what QoS it needs to operate at (Column 1, line 65 – Column 2, line 25; Column 2, line 63 – Column 3, line 11).

Regarding claims 18, 35, and 52, Pandya in view of Koskelainen discloses the step of marking the first group is performed by at least communicating the first behavioral treatment to a differentiated services node located at a border of a differentiated services domain; and wherein the step of marking the second group is performed by at least communicating the second behavioral treatment to the differentiated services node (Pandya, Column 14, lines 54 – 64; Column 15, lines 1 – 10; Column 16, lines 7 – 19); Koskelainen, Column 4, lines 22 – 29; Figure 2, element 16).

Regarding claims 26, 43, and 60, Pandya in view of Koskelainen discloses that the initial set of QoS values is an initial set of Differentiated Services Codepoint (DSCP)

values (Koskelainen, Column 4, lines 20 – 29); wherein the updated set of QoS values is an updated set of DSCP values; wherein the step of estimating traffic bandwidth further comprises the steps of defining one or more QoS policies that specify target bandwidth values and a range of possible services for each the plurality of data flows (Pandya, Column 11, lines 36 – 46), wherein a given target bandwidth value is specified for the given data flow (Column 15, lines 46 – 58), and wherein the given target bandwidth identifies a specific bandwidth that is desirous or required by the given data flow (Pandya, Column 11, lines 36 – 41); gathering information about the traffic bandwidth; and determining the traffic bandwidth based on the information gathered (Pandya, Column 12, lines 15 – 29; Column 10, lines 1 – 11; Column 15, lines 23 – 28).

**Claim 22, 39, and 56 are rejected under 35 U.S.C. 103(a) as being unpatentable over Pandya in view of Dillon (6473793).**

Regarding claim 22, 39, and 56, Pandya does not explicitly indicate that the step of determining the achieved flow bandwidth is performed by at least checking a Transfer Control Protocol/ Internet Protocol (TCP/IP) window size and determining a value for the achieved flow bandwidth based on the TCP/IP window size. Dillon teaches the idea of using the information in TCP/IP protocol to help enforce data rates in a network (Column 3, lines 41 – 58). It would have been obvious to one of ordinary skill in the art at the time the invention was made because TCP is a common connection type in the internet and it can easily be throttled based on window size (Column 1, lines 51 – 65).

**Claim 23, 40, and 57 are rejected under 35 U.S.C. 103(a) as being unpatentable over Pandya in view of Bushmitch (5928331).**

Regarding claims 23, 40, and 57, Pandya does not explicitly indicate that the step of determining the achieved flow bandwidth is based on reception quality feedback from a Real-Time Transport Protocol (RTP) receiver. Bushmitch teaches that RTP information is associated with RTCP packets that have flow control and session management information about the flow (Column 6, lines 13 – 24). It would have been obvious to one of ordinary skill in the art at the time the invention was made to use RTP control feedback to learn all the information that the network needs to know about the achieved bandwidth of the flow and also because RTP deals with applications such as streaming data which keeping a QoS is more important (Column 1, lines 36 – 59).

**Claim 29, 30, 46, 47, 63, and 64 are rejected under 35 U.S.C. 103(a) as being unpatentable over Pandya in view of Haddock (6104700).**

Regarding claims 29, 46, and 63, Pandya does not explicitly indicate that the achieved flow bandwidth is a percentage of the network bandwidth. Haddock teaches that traffic flow can be measured according to the percentage of the maximum bandwidth that flow is using (Column 8, lines 1 – 15; Column 10, lines 51 – 67). It would have been obvious to one of ordinary skill in the art at the time the invention was made to use Haddock's teaching in Pandya's system in order to perform normalized calculation and not have to deal with the bit rate, just the percentage which leads to an easier to calculation QoS (Column 2, lines 12 – 30; Column 10, lines 51 – 67).

Regarding claims 30, 47, and 64, Pandya in view of Haddock discloses that the second behavioral treatment results in the dataflow having a different achieved flow

bandwidth, which is a different percentage of the network bandwidth (Haddock, Column 8, lines 51 – 67; Pandya, Column 16, lines 29 – 44).

Claims 21, 38, and 55 are rejected under 35 U.S.C. 103(a) as being unpatentable over Pandya in view of Ordanic (5751964).

Regarding claim 21, 38, and 55, Pandya does not explicitly indicate that the step of determining the achieved flow bandwidth is performed by at least estimating the achieved flow bandwidth based on Management Information Base (MIB) variables. Ordanic discloses uses a network nodes MIB to inform a network controller on the statistics and performances of the data flows (Column 4, lines 33 – 42). It would have been obvious to one of ordinary skill in the art at the time the invention was made to use Ordanic's system of managing a heterogeneous system using standard protocols and MIB's in Pandya's system in case Pandya needs to further monitor nodes which are heterogeneous to the system (Column 3, lines 24 – 35).

### ***Response to Arguments***

Applicant's arguments with respect to claims 1-65 have been considered but are moot in view of the new ground(s) of rejection.

### ***Prior Art***

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

U. S. Patent No. 6483805 issued to Davies, because it discloses using DSCP to give priorities to different applications communicating across a network.

### ***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Kevin Bates whose telephone number is (571) 272-3980. The examiner can normally be reached on 8 am - 4:30 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Hosain Alam can be reached on (571) 272-3978. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

KB

KB  
March 25, 2005

  
HOSAIN ALAM  
SUPERVISORY PATENT EXAMINER